Commonwealth of Virginia
Department of General Services
Division of Consolidated Laboratory Services
600 N. 5th Street
Richmond, Virginia 23219
(804) 648-4480

Drinking Water Chemistry
Sample Collection

I. Your Order

This shipment contains the sampling materials necessary for your requested water analysis.

A. Each kit shipment should have a 12x15 inch ziplock bag containing your Customer Order, Sample Requisition Forms, and a DCLS Address Label.

B. Use the photographs in the Sampling Procedures section to verify your shipment contains the correct sample and preservative containers (pictures of containers not to scale).

If you have questions regarding sampling or ordering, please call Office of Drinking Water (ODW) field office directly- http://www.vdh.state.va.us/odw/.

II. Sample Requisition Form

Each sample kit comes with a Sample Form. The kit name listed on the form should match the label on each sample bottle (ex: INO = Inorganic, DIQT = Diquat, MET = Metals, etc.). Blank and preservative containers will not have kit name labels. Please refer to page 14 for an example of a Sample Requisition Form.

A. Enter address changes on the forms Address Change box.

B. Please provide a telephone number where you can be contacted if there is a problem.

C. Some analyses require a duplicate sample to be collected. Each Sample Requisition Form contains an exact number of bar-coded peel-off labels for each sample container. This is to be placed **vertically** on <u>each</u> sample container (as shown in pictures) after collecting the sample. Field blank and preservative vials do not require peel-off labels.

III. General Sampling Information

If the sample site suitability is questionable, consult your local VDH ODW before sampling.

A. At the time of sample collection, <u>with the label on the form</u>, enter the Collection Date and Time on the label. Please write legibly. For collection time, use 24-hour military time, i.e. add 12 hours to a standard time between noon and midnight. See examples below.

Civilian	Military	Civilian	Military	Civilian	Military
6:00 AM	0600	12:00 Noon	1200	5:00 PM	1700
7:30 AM	0730	1:00 PM	1300	7:25 PM	1925
9:00 AM	0900	3:25 PM	1525	9:00 PM	2100

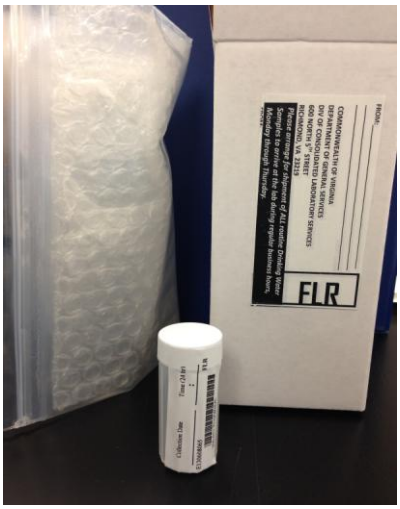
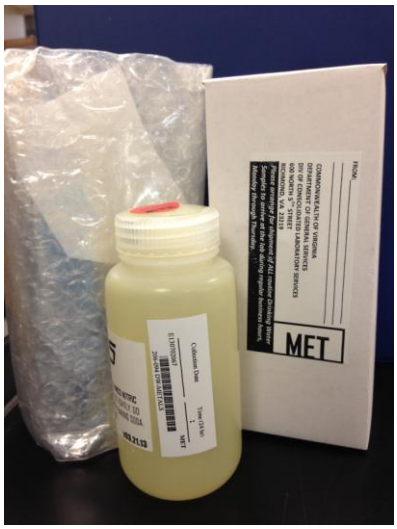
B. For all sample containers, place the label on the bottle aligned with the bottle's length.

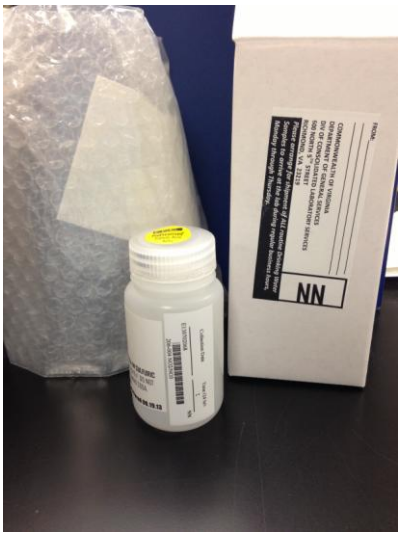
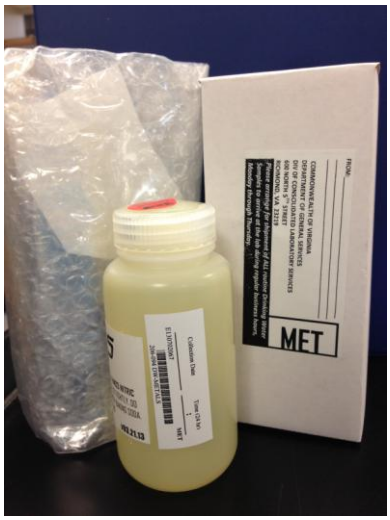
C. The Holding Time (HT) listed with each kit container picture is the time allowed by deferral regulation from sample collection to the start of laboratory analysis. Please ship samples to DCLS as soon after collection as possible to avoid testing delays and holding time violations.

D. If a sample kit includes a Field Blank, take it to the sampling site and return it to DCLS with the sample. This will expose the Field Blank to the same transportation and sampling conditions as the sample containers, and is required in some Environmental Protection Agency (EPA) testing to monitor quality control of collection and shipping. Do not open the Field Blank.

E. These sample containers are contaminant free and some include a required preservative. To avoid contamination and preservative loss, do not rinse any of these containers and do not overfill when sampling. Some kits contain separate preservative vials. After using them, return them to DCLS with the samples for appropriate disposal.

IV. Samples Which <u>Do Not Require</u> Cooling During Storage and Shipment

A. **Code:** FLR **Name:** Fluoride **HT:** 28 days **Container:** 20 ml vial		B. **Code:** MET **Name:** Metal **HT:** Mercury- 28 days **Container:** 250 ml bottle	

C. **Code:** NN **Name:** Nitrates/ Nitrites **HT:** 14 days **Container:** 125 ml bottle		D. **Code:** RAD **Name:** Radiological **HT:** 5 days **Container:** 1 gallon cubitainer	
E. **Code:** URANIUM **Name:** Uranium **HT:** 6 months **Container:** 250 ml bottle			

1. Sample from a cold water tap. Remove faucet attachments such as aerator, screen, filter or splash guard.

2. Flush the faucet for at least five (5) minutes, and then adjust the flow to a slow even stream so the water is not aerated when filling the sample container.

3. Remove the cap from one sample container only. Do not touch the inside of the cap or the rim at the top of the container.

4. **Caution:** Handle with care. When a container has a reagent, do not rinse the container out, it is intended for preservation. If any chemical spills on hands, rinse thoroughly. Do not get in eyes.

5. Fill the container completely, including as little air as possible.

6. Tightly cap the container. Shake it vigorously for one (1) minute to mix the sample with preservative. Invert the container and check for leaks.

7. Dry the outside of the sample container, remove the completed peel-off label from the form and place it on the container (as indicated in the pictures). The label adheres better to a dry container.

V. L&C Samples <u>Do Not Require</u> Cooling During Storage and Shipment

A. **Code:** L&C **Name:** Lead and Copper **HT:** 14 days (6 months after preservation at the laboratory) **Container:** 1 liter bottle	

1. Sampling requires at least six (6) hours during which no water is used from the samples tap and nearby taps. We recommend sampling in early morning or evening upon returning home to ensure the stagnant water conditions exist.

2. Use a kitchen or bathroom cold water tap for sampling. Do not sample from a tap with a water softener. DO NOT remove the aerator before sampling.

3. To sample, place the sample container below the faucet and gently open the cold water tap. Fill the container all the way to the neck under the threads. A full container = 1000 ml.

4. **Caution:** Handle with care. When a container has a reagent, do not rinse the container out, it is intended for preservation. If any chemical spills on hands, rinse thoroughly. Do not get in eyes.

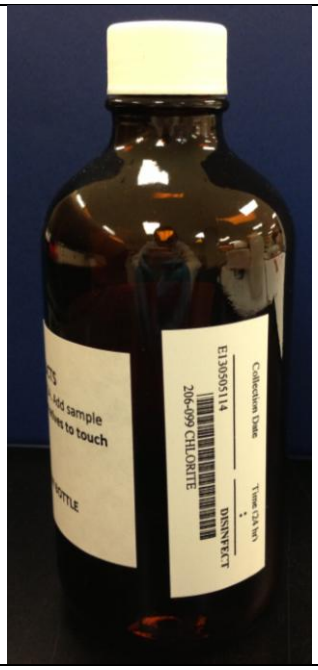
5. Tightly cap the sample container. Shake it vigorously for one (1) minute to mix the sample with preservative. Invert the container and check for leaks.

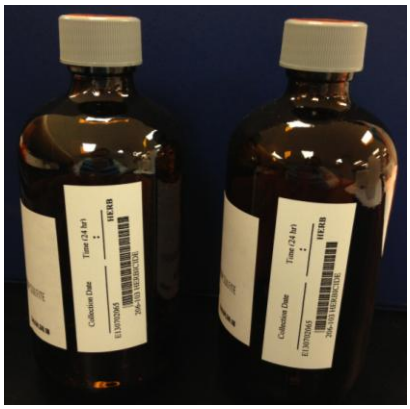
6. Dry the outside of the sample container, remove the completed peel-off label from the form and place it **vertically** on the container (as indicated in the pictures). The label adheres better to a dry container.

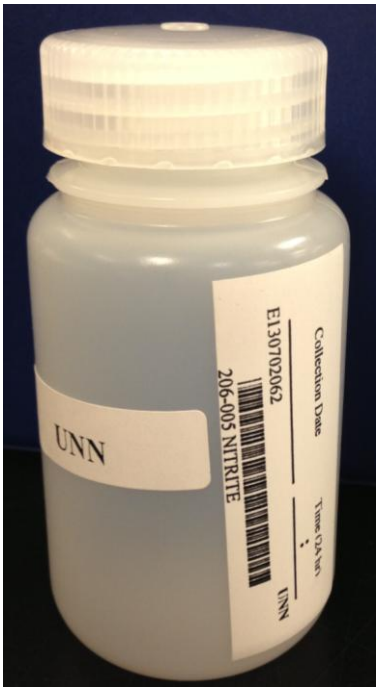
7. If plumbing repairs or replacements have been done since the precious sampling, note this on the sample form.

8. If samples must be stores before shipment, keep them in a chemical or contaminant free area.

VI. Samples Which Require Cooling During Storage and Shipment

A. **Code:** CARB **Name:** Carbamates **HT:** 28 days **Container:** 40 ml vials		B. **Code:** DIQT **Name:** Diquat **HT:** 7 days **Container:** 250 ml bottle	
C. **Code:** DISINFECT **Name:** Disinfect By-Products **HT:** 14 days **Container:** 250 ml bottle		D. **Code:** HAA **Name:** Haloacetic Acid **HT:** 14 days **Container:** 60 ml vials	

E. **Code:** HERB **Name:** Herbicides **HT:** 14 days **Container:** 250 ml bottles		F. **Code:** INO/HARD **Name:** Inorganic **HT:** 48 hours **Container:** ½ gallon bottle/ 250 ml bottle	
I. **Code:** TOCAL **Name:** Total Organic Carbon/ Alkalinity **HT:** 14 days **Container:** 250 ml bottle/ 40 ml vials		J. **Code:** TOC **Name:** Total Organic Carbon **HT:** 28 days **Container:** 40 ml vials	

K. **Code:** TP **Name:** Total Phosphorus **HT:** 28 days **Container:** 125 ml bottle		L. **Code:** UNN **Name:** Unpreserved **HT:** 14 days **Container:** 60 ml vials	

1. Sample from a cold water tap. Remove faucet attachments such as aerator, screen, filter or splash guard.

2. Flush the faucet for at least five (5) minutes, and then adjust water flow to a slow even stream so the water is no aerated when filling the sample container.

3. Remove the cap from one sample container only. Do not touch the inside of the cap or the rim at the top of the container.

4. **Caution:** Handle with care. When a container has a reagent, do not rinse the container out, it is intended for preservation. If any chemical spills on hands, rinse thoroughly. Do not get in eyes.

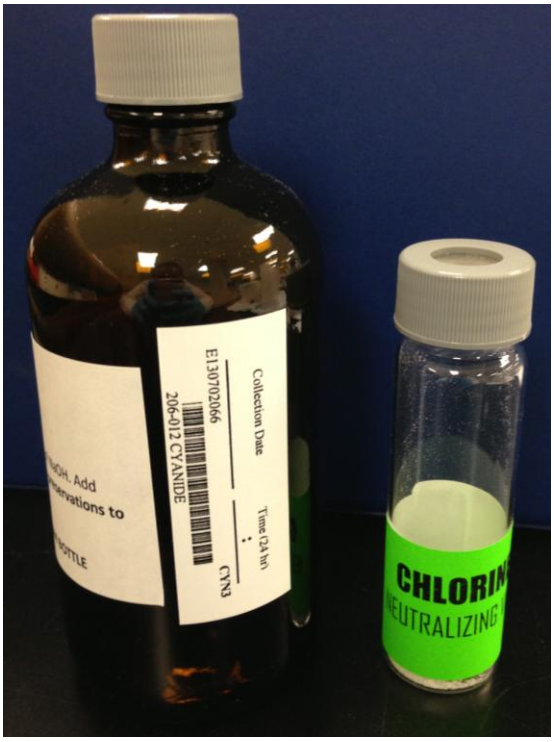
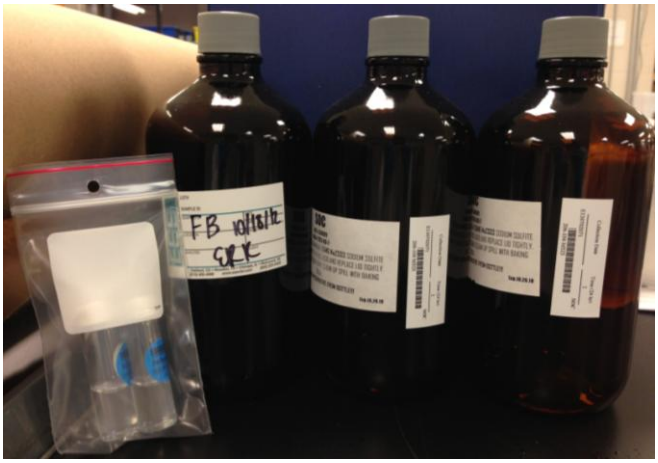
5. After filling the sample container, cap it tightly. Shake it vigorously for one (1) minute to mix the sample and preservative. Invert the container and check for leaks.

6. Dry the outside of the sample container, remove the completed peel-off label from the form and place it **vertically** on the container (as indicated in the pictures). The label adheres better to a dry container.

7. If samples must be stored before shipment, keep them in a chemical free refrigerator.

8. See Packing Instructions for cooling requirements during shipping.

VII. CYN3 and SOC Samples Which Require Cooling During Storage and Shipment

A. **Code:** CYN3 **Name:** Cyanide 335 **HT:** 14 days **Container:** 250 ml sample bottle/ 40 ml chlorine neutralizing vial	
B. **Code:** SOC **Name:** Synthetic Organic Chemicals **HT:** 14 days **Container:** 1 liter sample bottles/ 5 ml preservative vial/ 1 ml field blank	

1. Flush from a cold water tap. Remove faucet attachments such as aerator, screen, filter or splash guard.

2. Flush the faucet for at least five (5) minutes, and then adjust the flow to a slow even stream so the water is not aerated when filling the sample container.

3. Remove the cap from one sample container only. Do not touch the inside of the cap or the rim at the top of the container. If taking a CYN3 sample see step C, if taking a SOC sample see step D.

A. When collecting a CYN3 sample:

1. If the sample contains chlorine, add the Chlorine Neutralizing vial contents to the sample container before adding the sample. If the sample does not contain chlorine, do not add the chlorine neutralizing vial contents.

2. Fill the sample container completely, including as little air as possible. Tightly cap the container.

3. Shake it vigorously for one (1) minute to mix the sample and preservative. Invert the container and check for leaks.

4. Dry the outside of the sample container, remove the completed peel-off label from the form and place it **vertically** on the container (as indicated in the pictures). The label adheres better to a dry container.

5. If samples must be stored before shipment, keep them in a chemical free refrigerator.

6. See Packing Instructions for cooling requirements during shipping.

B. When collecting a SOC sample:

1. Fill the sample container about ¾ full from the tap (do not allow the sample to contact any plastic).

2. Tightly cap the container. Shake it vigorously for one (1) minute to mix the sample.

3. Add the contents of 1 preservative vial to the sample. **Caution:** Handle with care. This is an acid solution. If any acid spills on hands, rinse thoroughly. Do not get in eyes.

4. Fill the sample container completely. Tightly cap container.

5. Repeat steps 1-4 for the second container.

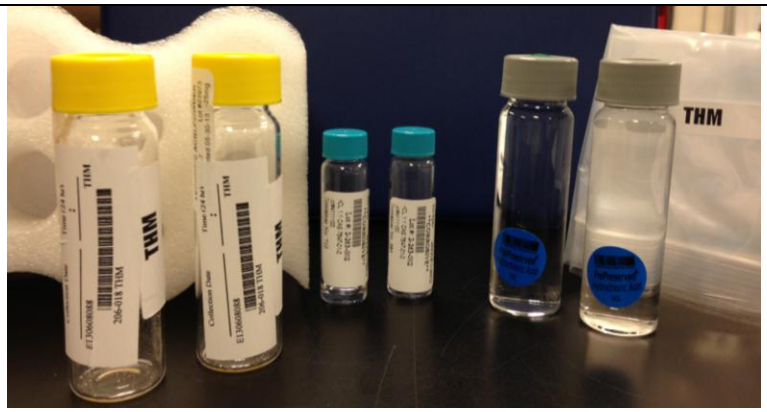
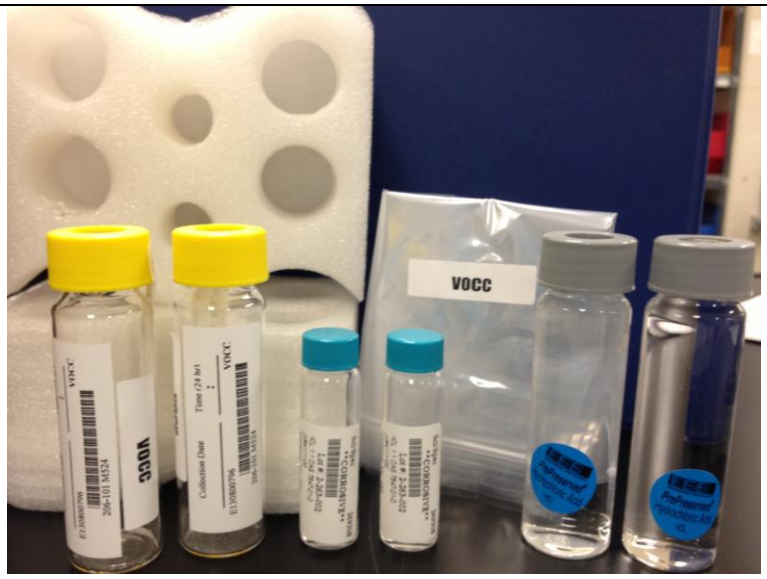
6. After filling the sample container(s), shake it vigorously for one (1) minute to mix the sample and preservative. Invert the container and check for leaks.

7. Dry the outside of the sample container, remove the completed peel-off label from the form and place it **vertically** on the container (as indicated in the pictures). The label adheres better to a dry container.

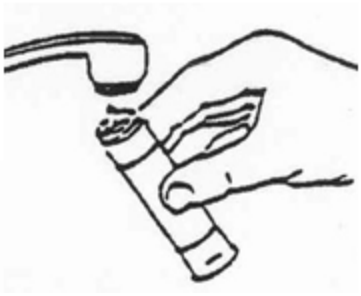
8. If samples must be stored before shipment, keep them in a chemical free refrigerator.

9. See Packing Instructions for cooling requirements during shipping.

VIII. Samples With No Head Space Which Require Cooling During Storage and Shipment

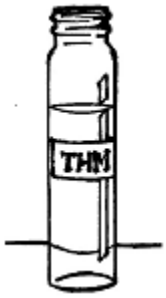
A. **Code:** FUMI **Name:** Fumigants **HT:** 14 days **Container:** 40 ml vials	
B. **Code:** THM **Name:** Trihalomethanes **HT:** 14 days **Container:** 40 ml vials/ 12 ml preservative vials/ 40 ml field blank vials	
C. **Code:** VOCC **Name:** Volatile Organic Chemicals - Chlorinated **HT:** 14 days **Container:** 40 ml vials/ 12 ml preservative vials/ 40 ml field blank vials	

1. Sample from a cold water tap. Remove attachments such as aerator, screen, filter or splash guard.
2. Flush the faucet for at least five (5) minutes, and then adjust the flow to about ¼ inch diameter (pencil size).
3. Remove the cap form one sample vial only. Do not touch the inside of the cap or rim of the vial.
4. Tilt the vial as shown. Let water flow down the inside wall.

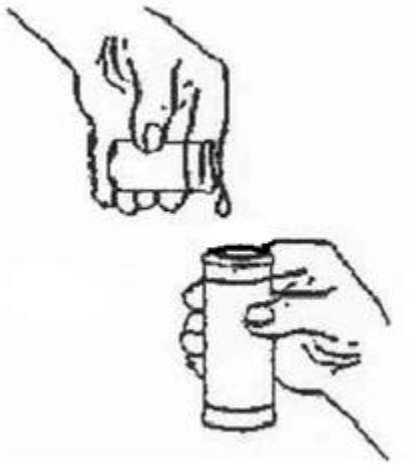


5. As the vial fills, rotate it to a vertical position

6. Fill the vial about 2/3 full.



7. Add the 1:1 hydrochloric acid from the small preservative vial to the sample. Cap the empty preservative vial and return it with the sample kit. **Caution:** Handle with care. This is an acid solution. If any of the acid spills on hands, rinse thoroughly. Do not get in eyes. Do not put sample in the preservative vial.



8. Slowly add tap water until the sample bulges above the rim. **Do not** overflow the vial.

9. Cap the vial securely. Do not over-tighten or the cap will break. Do not trap air between the sample and the cap.

10. Shake the sample vigorously for one (1) minute. Turn it upside down and lightly tap the cap. If no bubbles appear, the seal is good. Go to step 12. If bubbles are present, volatile analytes may be lost before analysis. Go to step 11.

11. If bubbles are present, remove the cap and add a few drops of sample water and go back to step 8.

12. If additional samples are to be collected, repeat the steps above for each item.

13. Dry the outside of the sample container, remove the completed peel-off label from the form and place it **vertically** on the container (as indicated in the pictures). The label adheres better to a dry container.

14. If samples must be stores before shipment, keep them in a chemical free refrigerator.

15. See Packing Instructions for cooling requirements during shipping.

V. Sample Packing

A. To avoid breakage, place the sample containers in the packing container provided for each kit. If the kit includes bubble-wrap, wrap glass container before placing them in the shipping box. Cushion the samples so they are snug.

B. If your samples require cooling, some shipping coolers are provided in your shipment (if you would like to request more coolers contact DCLS ext 104). Cover samples with ice. Use enough ice so that not all of it will melt before arriving at DCLS.

1. Samples that do not require cooling may also be placed on the ice if your kit includes coolers. Put the styrofoam lid on the cooler.

C. Put the Sample Requisition Form in a separate ziplock bag, seal the bag and put it in the shipping box. If the shipping box contains a styrofoam cooler inside of it, then place the ziplock bag on top of the styrofoam lid.

D. Tape the shipping box and place the blue DCLS address label on the box.

VI. Sample Shipment

A. Ship the sample to DCLS using one of the following:

1. DCLS (state contracted) Courier Service. Go to http://www.dgs.state.va.us/CourierList/tabid/829/Default.aspx for the nearest courier service pick-up location. There is no charge for this service. The use of the courier is strongly recommended.

2. UPS

3. FedEx

4. Personal Delivery

B. In order to serve you more efficiently and to keep the cost of testing down, we ask you to please arrange for shipment of all routine drinking water samples to arrive at the lab during regular business hours, Monday – Thursday. Please do not send samples the week of Thanksgiving, Christmas or New Years. This will ensure that your samples will be processed when the laboratory is fully staffed and operating at full capacity. Also ensure they do not arrive on state holidays including:

New Year's Day	Memorial Day	Veteran's Day
Lee-Jackson Day	Independence Day	Thanksgiving
Martin Luther King, Jr. Day	Labor Day	Christmas Eve
President's Day	Columbus Day	Christmas Day

C. The governor may close state offices for extraordinary events. DCLS attempts to continue usual operations during inclement weather but cannot guarantee delivery receipt.

DCLS Sample Requisition Form Example: